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Evaluation of HIV Health Services in Lagos State: An Empirical Study

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Abstract – This paper investigates the efficiency of a particular health service (specifically HIV/AIDS counselling and testing centres (HCT) in Lagos State, Nigeria). A survey of 958 students, aged between 15-25, was carried out in Lagos State secondary schools and Lagos State University, in conjunction with the Lagos State Ministry of Education, Guidance and Counselling Unit. It was found that there was a low awareness about HIV testing and counselling activities in all the Lagos State divisions. This result suggests that Lagos State students remain vulnerable and that HCT centres are less organized than they could be and it proposes that knowledge management (KM) initiatives be adopted to increase both efficiency and effectiveness of efforts for this essential health service.

Keywords: HIV/AIDS, Nigeria and Knowledge Management.

1.0 Introduction

Nigeria is reported to have the largest number of HIV/AIDS cases in Sub-Saharan Africa; UNAIDS (2002) stated that HIV infection and related illnesses are pronounced in teenagers and young people (Simbayi *et al*, 2004). As will be detailed later, this matches the results of our study in Lagos State Schools which evaluated the impact of the HIV Counselling and Testing Centres (HCT). Globally, financial challenges and human incapacity issues have been factors mitigating against the quality of the services provided by HCT centres. The standard services provided by an HCT centre and other HIV/AIDS stakeholders span registration, confidential counselling, HIV testing, receiving results, post-test counselling, post-test clubs for support and referral for therapeutic measures, prevention of mother-to-child-transmission (PMTCT) and antiretroviral (ARV) therapy (WHO, 2011).

These stakeholders range from federal, state, local, non-governmental and international organisations. Lagos State requires active HCT centres because of their developmental features and commercial activities. This paper investigates the effectiveness and strength of HCT centres by examining their impact on a particular risk group (Lagos State students) in their respective administrative divisions: Badagry, Epe, Ikeja, Ikorodu and Lagos Island. The Lagos State AIDS Control Agency (LSACA) state that there are 167 HIV facilities centres and organisations providing HIV/AIDS-related services and 33 providing mobile HCT services (Lagos State AIDS Control Agency, 2010).

The strength of HCT centres in Lagos State has undermined the HIV/AIDS risk group (i.e. students) activities. These have increased vulnerabilities to HIV transmission through the use of drugs, “sharps” (surgical instruments: needles and so forth) and fear of stigmatisation. According to Owolabi *et al.* (2005), sexual behaviour among adolescents confirmed that there are knowledge deficits about STIs and HIV with this age of this risk group. Poverty and unemployment in Nigeria contributed to an increase in sex workers and child abuse poses an adverse implication to the economic growth in Sub-Saharan Africa (Whiteside, 2002). WHO (2011) reaffirmed that the spread of HIV/AIDS is driven by human behaviour due to lack of knowledge and awareness. These include HIV risk factors responsible for infection transmission through the contact of bodily fluids and organisational challenges.

Application of the Knowledge Management (KM) paradigm could address organisational cost implications to enhance real-time activities on HIV/AIDS awareness. Mair and Whitten (2000) defined telemedicine as “the use of telecommunication technologies to provide information and services”. Currel *et al.* (2010) compared the use of telemedicine for public health services to face-to-face work concluding that it is an important technological achievement and is also cost efficient. The application of telemedicine includes transmitting test results and healthcare advice through telephone lines with health professionals. Telemedicine is feasible in the public health system as an effective means of contacting patients and communities. The interrelationship between telemedicine and health information management can address issues based on the acquired knowledge and information system. Telemedicine in Nigeria is still limited by poor information management systems which, according to Idowu *et al.* (2003) is largely absent in the Nigerian health sector.

2.0 Methods

The understanding of the work of the HCT centres and Lagos State student behavioural responses could reveal knowledge gaps in organisational effectiveness and the high prevalence rate for HIV/AIDS.

Participants

The research, primarily focussed on day school students aged 15 and above, was extended to include university level students aged 25 and above, in order to understand the state of HIV/AIDS in Lagos State communities. The study excludes non-Lagos State residents (who remain a risk group). Participants were randomly selected from senior secondary schools in the Lagos State administrative divisions and Lagos State University (LASU).

Research methods

A bespoke questionnaire was administered in senior secondary schools (SSS) and Lagos State University (LASU). One thousand questionnaires designed by the research team were used to obtain the data and a 95.8% response rate was achieved. The high response rate is explained by our close collaboration with the Lagos State Ministry of Education and their encouragement at the local level. The questionnaires

collected demographic variables and information regarding participants' concerns related to HIV/AIDS.

Data collection

Settlement factors in the Lagos State urban metropolis and rural areas posed several challenges with regard to sampling students. Students were sampled in their various schools taking into consideration the HIV/AIDS risk factors and peers issue. Counsellors at the schools administered the questionnaire in accordance with Lagos State Government policy.

Ethical consideration

Ethical approval to carry out the research was obtained from the Lagos State Ministry of Education Guiding and Counselling unit. Stipulated conditions were that the data should be made anonymous and that only school counsellors were to administer the questionnaire.

Data analysis

The responses to the questionnaire were analysed using the Statistical Package for the Social Sciences (SPSS®17). Chi-square tests of 0.05 level of significance testing were used.

3.0 Results

Demographic Characteristics

A total of 958 (95.8%) out of 1000 questionnaires were returned. Data was collected from 421 (43.9%) males and 535 (55.8%) females. A summary of the demographic data is presented in Table 1. The table shows the ages of the respondents as follows: 15-16 years (35.1%), 17-18 years (20.7%), 23-24 years (11.9%) and 25 years and above (26.8%). As expected, Ikeja division had the highest number of respondents (374) (39.1%) due to the number of local government organisations, the large number of schools and the urban nature of the area. Student movement across local government's areas accounts for the response rate in the other divisions. Using chi-square tests, the response rates were found to be statistically significant, given the respondents' age groups and Lagos State divisions (LGAs).

Table 1 Demographic Characteristic: Respondents Age and LGAs Division

Characteristic N = 958	Male		Female		Total	
	n	%	n	%	N	%
Age Groups (yrs)						
15 – 16	157	16.6	174	18.5	331	35.1
17 – 18	110	11.7	85	9	195	20.7
19 – 20	10	1	12	1.3	22	2.3
21 – 22	12	1.3	18	1.9	30	3.2
23 – 24	23	2.4	89	9.4	112	11.9
25 and above	104	11	149	15.8	253	26.8
Divisions (LGAs)						
Badagry	57	6	106	11.1	163	17.1
Epe	85	8.9	71	7.4	156	16.3
Ikeja	177	18.5	197	20.6	374	39.1
Ikorodu	35	3.7	72	7.5	107	11.2
Lagos Island	62	6.5	74	7.7	136	14.2
Non-Lagos Residence	5	0.5	15	1.6	20	2.1

*Missing data: Age groups = 15 (1.6%), Divisions = 2 (0.2%), **p-value = 0.05

3.1 Awareness of HIV test and counselling

Table 2 summarises the respondents' awareness of HIV testing, diagnosis and counselling. Awareness can be seen to be associated with respondents' age group and LGA divisions. The results showed that there is a low awareness about HIV testing and counselling in all the Lagos State divisions. The study showed a statistically significant lower awareness for the following age groups: 15-16, 17-18 and 19-20. Those aged 23-24 displayed a considerably low level of awareness of HIV testing and counselling. Marital trust could affect the responses for age groups 25 and above which showed the participants to be less concerned about HCT activities in their locality.

Table 2 Respondents' Awareness on HIV Test and counselling

Characteristics N = 958	HIV Test Awareness					
	Tested		Not Tested		Total	
Divisions, n = 935 (97.6%)	n	%	n	%	N	%
Badagry	43	4.6	116	12.4	159	17
Epe	17	1.8	138	14.8	155	16.6
Ikeja	159	17	208	22.2	367	39.3
Ikorodu	16	1.7	90	9.6	106	11.3
Lagos Island	44	4.7	84	9	128	13.7
Non-Lagos Residence	8	0.9	12	1.3	20	2.1
Age Groups, n = 922 (96.2%)						
15 - 16	48	5.2	278	30.2	326	35.4
17 - 18	25	2.7	165	17.9	190	20.6
19 - 20	4	0.4	18	20	22	2.4
21 - 22	13	1.4	17	1.8	30	3.3
23 - 24	56	6.1	50	5.4	106	11.5
25 and Above	139	15.1	109	11.8	248	26.9

* Missing data, Divisions = 23 (2.4%), Age groups = 36 (3.8%) ***p*-value = 0.05.

3.2 Awareness of HCT Centres

Respondents were asked if they were aware of the existence and activities of an HCT centre in their locality and their response is depicted in Table 3. The awareness of the existence of HCT centres in Lagos State divisions is low. None of the age groups showed a satisfactory level of awareness of existence, role and activities of HCT centres; only 1 out of 3 respondents was aware of HCT activities in their respective localities.

Table 3 Respondents' Awareness of HCT Centres in Lagos State

Divisions N =921	Awareness of HIV Counselling and Testing Centres					
	Aware		Not Aware		Total	
	n	%	n	%	N	%
Badagry	57	6.2	97	10.5	154	16.7
Epe	43	4.7	113	12.3	156	16.9
Ikeja	164	17.8	198	21.5	362	39.3
Ikorodu	33	3.6	70	7.6	103	11.2
Lagos Island	57	6.2	70	7.6	127	13.8
Non-Lagos Residence	8	0.9	11	1.2	19	2.1
Age Groups, n = 908,						
15 - 16	108	11.9	209	23	317	34.9
17 - 18	64	7	123	13.5	187	20.6
19 - 20	5	0.6	17	1.9	22	2.4
21 - 22	13	1.4	17	1.9	30	3.3
23 - 24	49	5.4	57	6.3	106	11.7
25 and Above	118	13	128	14.1	246	27.1

*Missing data, Division = 37 (3.9%), Age groups = 50 (5.2%) ***p*-value = 0.05

4.0 Discussion

This study highlights institutional issues regarding the HIV/AIDS epidemic and suggests that the problem of HIV/AIDS transmission is not being adequately addressed in Lagos State schools and the wider environment. To complicate this further, additional impediments in the form of abundant social amenities and tourist activities pose new challenges in all the Lagos State administrative divisions. This had involuntarily forced the state to create HCT centres in strategic location to address such prone divisions. The following sections address such issues from a geographical (divisional) perspective.

4.1 Badagry Division

The study establishes the extent of HIV testing awareness in the Badagry division and the values of capacity builders working on individual motivations for HIV testing in the division. The response highlighted a low awareness and ineffectiveness of the HIV counselling and testing centres in this division. The Badagry division (located on the western coastal part of Lagos State, forming a border-boundary with the Republic of Benin) is highly influenced by West African trans-trade and smuggling activities in groceries, automobiles, human trafficking,

petroleum products and clothing. Transportation activities into other West African nations contribute to the spread of HIV/AIDS in the division.

The study concurs with established research (Balogun and Odeyemi, 2010) which demonstrated a low awareness for HIV testing among the traditional birth attendants (TBAs) who commonly use sharp implements (not always surgical grade) in the Badagry division, thus contributing to mother-to-child transmission (MTCT). Similarly, there are three military bases located in the Badagry division; a naval base, Alakija, Army Cantonment, Ojo and a Military Resettlement Centre, Badagry. They are all actively involved in United Nation (UN) peace keeping and reconciliation. LSACA (2010) established that activities such as prostitution, human and drug trafficking and traditional birthing (giving birth at traditional birth attendant centre) are common in these areas. Increased awareness of HIV testing and counselling in the Badagry division should be encouraged and previous initiatives have included a free HIV test facility at the Lagos State Trade Fair Centre. In spite of these resources, awareness has not improved significantly; we are of view that mobile HCTs at such strategic locations of the division as the Alaba Electronics International Market, Alaba, Lagos State University (Ojo) and the Lagos State College of Education, (Ijanikin) would impart significant improvements in HIV awareness and eventually contribute to the greater control of HIV in this division.

4.2 Epe Division

The current study evaluated respondents' HCT awareness in the Epe division, investigating issues such as HIV information, education and communication and education (IEC) materials and activities. Tables 2 and 3 above show the low level of HCT activities in the Epe division. The result reiterates the requirement for action to address the vulnerability of Lagos State students to HIV/AIDS transmission and prevalence. The capacity and strength of HCT centres need to be improved with increased empowerment and funding. NGOs and community-based organisations also appear to be relatively ineffective. The Epe division is categorised as a rural area with various types of settlement (disperse or concentric) (Adeyemi, 2007). The Epe division shares boundaries with Ogun State and various creeks, and many of its inhabitants are engaged in agriculture (fishing and farming) as their major occupation.

The Lagos State Government established the satellite campus of Lagos State University (Faculty of Engineering) and Lagos State College of Primary Education, including Lagos State Technical College in order to establish a developmental foundation in the region (Lagos State Ministry of Education, 2011). Poverty in this region implies there are important HCT factors such as low purchasing power, high unemployment, high mortality, low life expectancy and insufficient access to quality social amenities (Lagos State Ministry of Women affairs and Poverty Alleviation, 2011). The convergence of students from other parts of Lagos State contributes to the HIV transmission and prevalence in the Epe division. This is due to activities commonly carried out by students, including cultism, sexual networks, rape and drugs (Oloko and Omoboye, 2004). Child abuse, street hawking and night markets increase the vulnerability of children and students to HIV infection through rape, STIs/STDs, drugs and casual sex. Furthermore students are prone to dominate the HIV/AIDS transmission network through prostitution, rape and drug use.

4.3 Ikeja Division

The study evaluates the extent of HIV counselling and testing awareness in the Ikeja division using a selected risk group (students). The survey confirmed that the HCT activities are low due to the significant number of respondents who had an HIV test administered in the previous two years, and pupils who were aware of HCT centres in their respective localities. The stakeholders should be aware of the implication of a lack of HIV testing awareness on such a metropolis. Ikeja division is the largest, most developed, most populated and busiest division. It shares a boundary with Ogun State in the Ifako-Ijaye local government area (LGA). All the local government areas under Ikeja division are categorised as urban (Adeyemi, 2007). The Ikeja division is a centre with the seat of Government administration, factories and commercial activities of Lagos State.

The Ikeja division has the highest number of secondary schools in Lagos State. Lagos State Abattoir is located at Ifako-Ijaye; it records over a quarter of a million customers from other parts of the state and neighbouring states every day. Intra-state, inter-States and international (West Africa countries) journeys are common in the Ikeja division. These factors have an impact on HIV/AIDS transmission and prevalence. The convergence of factories, working class people, civil servants, secondary school students, daily marketers (Oshodi), periodic marketers (Igando, Agege, Ayobo and Mushin) and sex workers in the Ikeja division make it essential to increase the required level awareness of HIV counselling and testing. There are also three main military bases in the Ikeja division: Ikeja Air Force Base, Ikeja Army Cantonment and the Ipaja Military Resettlement Camp, which are involved in military operations at both national and international levels. The Nigerian Police College and recruitment centre is based in the heart of Ikeja, attracting over two million people every year.

The Lagos State College of Medicine is located in Ikeja LGA with modern hospitals built in Ifako-Ijaye LGA and Alimosho LGA. The Orile-Agege Medical and Health Centre was recently upgraded and equipped to the standard of a general hospital (Lagos State Ministry of Health, 2010). One of the busiest airports (Murtala Muhammed Airport) in Africa is situated in Ikeja LGA. The location of the airport inadvertently assists commercial sex activities, casual sex and drug activities in Ikeja Local Government areas. These developmental indices influence the HIV/AIDS risk factors in the Ikeja division and add credence to the necessity to increase awareness of the need for frequent HIV testing for residents, workers and students in the Ikeja division.

4.4 Ikorodu Division

The Ikorodu division is categorised as a semi-urban area (Adeyemi, 2007). It shares boundaries with the Isagamu (Ogun State area), Ikeja and Epe divisions. The Ikorodu division is influenced by Ikeja division. The Lagos State Polytechnic campus is situated in Ikorodu LGA with a large population of students. Activities such as cultism, drugs and prostitution among the students are commonly practiced. As in other division, night markets, street hawking and child abuse are also common in the Ikorodu division. The relationship between the transporters and rural market women are casual. This promotes fornication, adultery and extra-marital affairs (Ekanem *et al*, 2005). Cultural practices and norms such as tribal marks, male

circumcision and secret cult activities (fraternity) occur in the rural areas of the Ikorodu division. These activities promote HIV/AIDS transmission and prevalence TBAs and fraternity activities are also common in this division. The high level of poverty in the Ikorodu division further promotes the incidence of sex workers and extra-marital affairs. The largest iron metal market in Nigeria, (Owode Onirin) is situated at Ajegunle in Ikorodu LGA and attracts over three million people a week (Lagos State Ministry of commerce, 2011). The convergence of Lagos State Polytechnic students in the campus and Ikorodu residents contributes to HIV/AIDS risk factors such as STIs/STDs and rape.

4.5 Lagos Island Division

As seen in Table 2 and 3, the study revealed a low awareness of HCT centres and significantly low percentage of HIV test awareness in the Lagos Island division. The Lagos Island division is categorised as an urban centre. It houses the administrative headquarters of banks and financial institutions, companies, foreign embassies and commercial activities. Night clubs and beach bar activities are common in the Lagos Island division. They support the promotion of sexual networks (rape and casual sex) and drugs. The University of Lagos, Federal College of Technology, Federal Technical College and Lagos State School of Nursing are situated in the Lagos Island division. The co-location of these institutions fuels the occurrence of illicit activities such as casual sex, rape, drugs and cultism, similar to those occurring in the Ikorodu division of Lagos State.

Commercial sex workers (CSW), rape, drugs, casual sex are particularly common in the Surelere LGA of Lagos Island division (Oyefara *et al*, 2007; Ogunjuyigbe and Adeyemi, 2007). These factors have an adverse effect on children, increasing the incidence of orphanage, child abuse and MTCT in Lagos State. Students and working class population converging from the Lagos mainland metropolis for social activities encourage the expansion of sexual networks and outbreaks of STIs/STDs. The Balogun Market of Lagos Island LGA is a busy daily market which attracts more than five million people every day from both within the state and outside (Lagos State Ministry of Commerce, 2011).

The former Federal Government secretariat and Defence Headquarters are situated in Lagos Island LGA. This attracts a high number of people and migrants from other parts of the country and increases the level of commercial sex work activities and casual sex. Students and young people are the main risk groups for HIV/AIDS transmission in the Lagos Island division due to widespread poverty (Apena *et al*, 2012). The Lagos Sea port is situated at Apapa LGA of Lagos Island division and encompasses social activities such as night theatres, films, dance shows and bars. These activities contribute to the challenges facing the transmission of HIV/AIDS in the Lagos Island division of Lagos State.

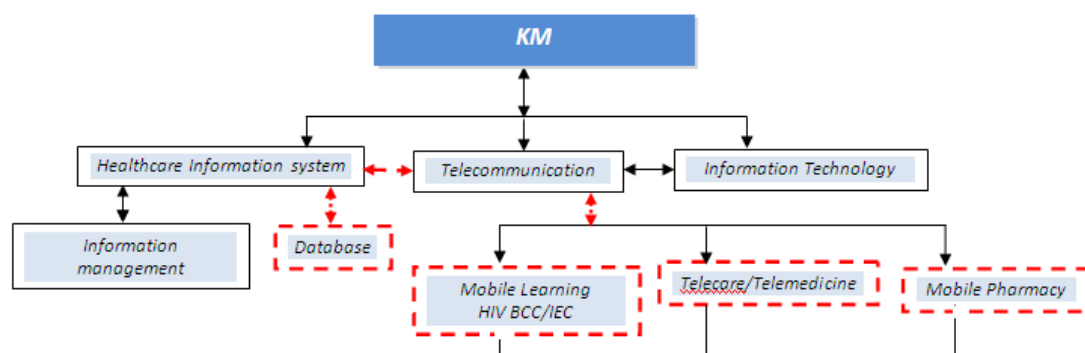
5.0 Application of Knowledge Management tools and techniques

Knowledge Management (KM) has been described as organizational knowledge with meaningful interaction of people, processes, activities and technologies that enable the sharing, creation and communication of knowledge (Bali *et al*, 2011). KM techniques could help improve the effectiveness of complex networks such as the

organizations that are dealing with HIV/AIDS in Nigeria. The benefits of KM to HIV/AIDS organizations in Lagos could span improved information sharing, greater teamwork, better preparedness, reduced duplication of efforts and increased levels of coordination.

Current developments in telecommunication and internet technologies will hopefully contribute to the implementation of electronic health (E-Health) systems in Nigeria. This is likely to improve the quality of healthcare and increase life expectancy. Full implementation of telemedicine in Nigeria could promote equality in the availability of quality healthcare and HIV/AIDS activities. Adoption of E-Health based programmes could strengthen HCT activities and address factors that promote HIV/AIDS stigmatisation and discrimination (HASD) among the risk groups (such as culture and religion). The introduction of mobile pharmacies could be a solution to the stress faced by People Living with HIV/AIDS (PLWHA). The use of mobile pharmacies extends beyond the Nigerian programme of vaccination and educational regarding polio. There needs to be effective application of ICTs technologies in the pharmacy service to meet the needs of sexually transmitted infections (STIs) patients.

The use of an electronic centralised data based system will offer solutions to HIV/AIDS monitoring and evaluation challenges as currently the risk groups medical history are difficult to trace on STIs and HIV. Mobile learning could be a solution to challenges faced by the HCT centre in Lagos State on HIV behavioural change communication (BCC) and information, education and communication (IEC). This will support information sharing and medical decision making. Apena *et al.* (2010) showed that correct application of KM tools and techniques could enhance current HIV/AIDS activities and synchronise disjointed knowledge leading to a more coordinated approach towards tackling the HIV/AIDS epidemic and prevalence rate as illustrated below.



Knowledge Management Concept

6.0 Conclusion

This research has identified areas of ineffectiveness in the work of the HCT centres in Lagos State division through the use of a selected HIV/AIDS risk group (students). The ineffectiveness of the HCT centres in Lagos State contributes to the current HIV prevalence among the active age group (15-24 and 25 and above) in Nigeria. The study suggests the adoption of knowledge Management (KM) initiatives (Bali *et al*, 2011) as a solution to mitigate HIV/AIDS organisational issues in Lagos State. The introduction of KM could enhance HIV service (such as counselling and testing awareness) and address the prevalence of HIV/AIDS. This will be the subject of a subsequent paper describing a KM-based framework aimed at enhancing the efficiency and effectiveness of those centres in Lagos State.

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